

REMARKS

Claims 11-15 and 17-21 are currently pending in this application. In view of the following remarks, Applicants submit that all the claims are in condition for allowance.

Claims 11-15 and 17-21 stand rejected under 35 U.S.C. §103(a) for purported obviousness over U.S. Patent No. 6,200,352 for Romack et al. in view of Octadecylamine document (www.ams.usda.gov/nop/nationalist.tapreview/octadecylamine.pdf).

In particular, the Examiner asserts that the table on page 15 of the specification is not commensurate in scope with the claims. More specifically, the Examiner believes that the table is directed to only a few of the species of surfactants, rather than the generic disclosure of surfactants disclosed in claim 11.

The following will reassure the Examiner as to proper claim scope.

The table on page 15 of the specification is commensurate in scope with the claims. More particularly, examples 1-11 on page 15 are representative members of the class of surfactants taught in the above-mentioned patent application. Expert's Declaration under 37 C.F.R. §1.132 of Geert Feye Woerlee dated March 29, 2007 Paragraph 5. Each representative member corresponds to one of the primary subclasses of ionic surfactants (i.e., cationic, anionic, or zwitterionic) therefore, it follows that the ionic surfactants disclosed in claim 11 will behave similarly to their representative member and produce similar results. Id.

Next, the Examiner asserts that the table does not disclose the percentage of dissolved surfactant used in each example. Because the total amount of ionic surfactant is known and is increased in each of Examples 6, 7, 8 and 9 respectively, and the amount of dissolved surfactant remained the same, it follows that the total amount of undissolved (solid) surfactant increased in each of Examples 6, 7, 8 and 9. Woerlee Declaration Paragraph 7. Therefore, the increasing amounts of undissolved surfactant are inherent and calculable from the data which appears in the table. Woerlee Declaration Paragraph 8.

Also, the Examiner questions whether Romack et al. discloses a composition with undissolved surfactant. Even if Romack et al. alluded to a composition that might have undissolved surfactant were the disclosed co-solvent not present, this only emphasizes that Romack et al. recommended the removal of any solid surfactant altogether.

In particular, a *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. In re Geisler,

116 F.3d 1465, 1471 (Fed. Cir. 1997). In column 1, lines 34-45 of Romack et al. reference is made to a dry cleaning system of the prior art that utilizes surfactants that contain a function moiety that is CO₂-philic, i.e., surfactants that are highly soluble in carbon dioxide. It is further observed in lines 38-41 that these CO₂-philic surfactants are not conventionally used for detergent cleaning and that there would be numerous advantages to employing conventional surfactants. In lines 42-45 it is stated "it would be extremely desirable to have a dry cleaning system for liquid carbon dioxide that employs conventional surfactants that do not contain a CO₂-philic group." In other words, Romack et al. aims to provide a dry cleaning system using liquid carbon dioxide and surfactants that have poor solubility in carbon dioxide. Hence, applicants do not dispute the Examiner's assertion that Romack et al. "that surfactant may not be soluble in carbon dioxide." As a matter of fact, applicants believe that Romack et al. actually teaches to employ a surfactant that is poorly soluble in carbon dioxide.

However, whereas the crux of the present invention is to employ dry cleaning compositions containing densified carbon dioxide and deliberately non-dissolved surfactant, Romack et al. teaches to take measures to ensure that all surfactant is dissolved. In column 2, lines 5-10 of Romack et al., it is stated that "an advantage of the present invention is that, by proper use of the co-solvent, conventional surfactants may be employed in a liquid carbon dioxide dry cleaning system." Furthermore, in column 2, lines 2-3 it is stated: "The surfactant is soluble in the co-solvent." Finally, the examples of Romack et al. clearly illustrate the use of a co-solvent to dissolve surfactants that would not dissolve in the carbon dioxide in the absence of such co-solvent. The essence of the invention disclosed in Romack et al. is to employ a co-solvent to render soluble surfactants that are poorly soluble in carbon dioxide in the absence of such a co-solvent. Hence, there is nothing in Romack et al. that suggests employing a surfactant and co-solvent in such concentrations such that the surfactant will not dissolve. Quite the reverse, Romack et al. actually teaches to employ co-solvent to ensure that the surfactant will be dissolved.

One skilled in the art reading Romack et al. would understand that in order to achieve the goal of no undissolved surfactant, adding more surfactant that would not be soluble in CO₂ would require the addition of a comparable amount of co-solvent to dissolve. Therefore, one skilled in the art would not read the disclosure of Romack et al. and conclude

Application No. 10/502,504
Paper Dated: April 16, 2007
In Reply to USPTO Correspondence of December 14, 2006
Attorney Docket No. 0470-044735

that a maximum amount of surfactant not dissolvable in CO₂ could be dissolved by a minimal amount of co-solvent. In fact, one skilled in the art would understand the surfactant and co-solvent would need to be provided in comparable solubility amounts. Because Romack et al. teaches taking measures to ensure a completely dissolved surfactant, it is not a reasonable interpretation of Romack et al. to construe the stated ranges of surfactant and co-solvent as the minimum amount of co-solvent and the maximum amount of surfactant. Thus, Romack et al. teaches away from the present invention and it cannot be obvious from Romack et al. to employ a cleaning composition that contains undissolved surfactant.

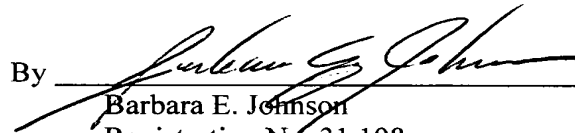
Finally, the claimed invention of undissolved surfactant produces new and unexpected results. In a situation where the difference between the claimed invention and the prior art is some range or variable within the claim, an applicant may rebut a *prima facie* case of obviousness by showing that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. In re Woodruff, 919 F.2d 1575 (Fed. Cir. 1990). Even if Romack et al. were somehow suggestive of a dry cleaning composition having undissolved surfactant, which it does not, the present invention establishes new and unexpected results when at least 10% of the solid surfactant is present in the claimed invention, because increasing the amount of solid surfactant improves the cleaning ability. Woerlee Declaration Paragraphs 10-12.

For all of the foregoing reasons, amended claims 11-15 and 17-21 are in condition for allowance. Reconsideration of the rejections and allowance of all pending claims 11-15 and 17-21 are respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By


Barbara E. Johnson
Registration No. 31,198
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
Telephone: 412-471-8815
Facsimile: 412-471-4094